

## ABSTRACT

The present invention relates to an apparatus for monitoring the progress of membrane fouling that occurs on pores as well as on the surface of a  
5 membrane by means of variations of zeta potential ( $\zeta$ ) of a hollow-fiber  
~~membrane according to time passage of filtration of a suspension, wherein~~  
colloid particles, biopolymers and other inorganic particles are dispersed, and  
the method thereof. Moreover, the present invention also relates to a method  
to identify the effect of concentration polarization layer and cake layer which  
10 can vary according to the axial position of a hollow-fiber and the developing  
progress of a membrane fouling by measuring the position-dependent zeta  
potential of the hollow-fiber membrane.

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